

Gestational Diabetes Mellitus (GDM)

What is GDM?

According to the Centers for Disease Control and Prevention (CDC), GDM is a form of glucose intolerance diagnosed in some women during pregnancy. GDM occurs more frequently among African-American, Hispanic/Latina, and American Indian women. It is also more common among obese women and women with a family history of diabetes. During pregnancy, gestational diabetes requires treatment to normalize maternal blood glucose levels to avoid complications in the infant. After pregnancy, 5-10% of women with gestational diabetes are found to have type 2 diabetes. Women who have had gestational diabetes have a 20-50% chance of developing diabetes in the next 5-10 years. Their children are at an increased risk for obesity as well as impaired glucose tolerance and type 2 diabetes. GDM may also be associated with intrauterine fetal death, increased frequency of maternal hypertensive disorders and the need for cesarean delivery.

In 2010, the Behavioral Risk Factor Surveillance Survey (BRFSS) estimated the Virginia prevalence of gestational diabetes to be 5.7% of pregnant women, though the sample size was small. The Centers for Disease Control and Prevention (CDC) estimate that GDM affects 2-10% of pregnant women in the United States, depending on the data source.

Based on the Virginia Pregnancy Risk Assessment Monitoring System (PRAMS) survey, 10.9% of pregnancies resulting in a live birth in Virginia were affected by gestational diabetes in 2007 and 2008. PRAMS is a survey of women soon after delivery, and cases of GDM were identified using the question, "Did you have high blood sugar (diabetes) that started during this pregnancy?"

Based on the results of the PRAMS survey, GDM prevalence was highest among Hispanic/Latina women, and risk increases with age, and decreases with educational attainment.

Percent of pregnancies affected by gestational diabetes, Virginia, 2007-2008

	GDM prevalence		GDM prevalence
Race/ethnicity		Age group	
Black, non-Hispanic (NH)	8.9%	<20	2.6%
White, NH	9.3%	20-24	8.8%
Hispanic	17.1%	25-29	8.8%
		30+	15.1%
Education		State total	10.9%
<High school	14.5%		
High school	11.0%		
>High school	9.9%		

Source: Virginia Department of Health Office of Family Health Services, PRAMS 2007-2008

Data note: Percents are weighted towards annual population estimates.

GDM Hospital Discharges

Another estimate of GDM prevalence is based on the Virginia inpatient hospital discharge data. Cases of GDM are identified when GDM is recorded as a diagnosis on a woman's hospital discharge record following a live birth. Here also, GDM prevalence is calculated as a percent of live births.

Differences in estimates between PRAMS and hospital discharge data may be due to GDM having been diagnosed earlier in the pregnancy, but not noted on the delivery discharge form.

Updated by the Virginia Department of Health, Office of Family Health Services, Diabetes Prevention and Control Project on 7/2011. For more information, visit <http://www.vahealth.org/cdpc/diabetes/>.

Rates were highest among Hispanic/Latina women and women of other/unknown race/ethnicity.

Percent of live births affected by GDM by race/ethnicity, Virginia, 2007-2009

	State total	White, NH	Black, NH	Hispanic/Latina	Other, NH
2007	6.0%	5.4%	4.8%	7.5%	8.8%
2008	6.1%	5.5%	4.7%	8.2%	8.9%
2009	5.9%	5.2%	5.0%	7.4%	9.1%
3-year average	6.0%	5.4%	4.8%	7.7%	8.9%

Source: Virginia Health Information, Inc. Hospital Discharge Dataset, 2007-2009

Data notes: All data include live births with birth procedure code ICD-9 V-27 and GDM code 648.8-648.84; records for each year were de-duplicated.

- Women with GDM are more likely to have a Cesarean delivery than women without GDM, and in both groups, the percent of babies delivered by Cesarean are increasing.
- Live births affected by GDM consistently cost \$1,480 more than those not affected by GDM, and length of hospital stay was 0.6 days longer for women with GDM. In both groups, cost, length of stay, and percent Cesarean section all increased from 2007 to 2009.

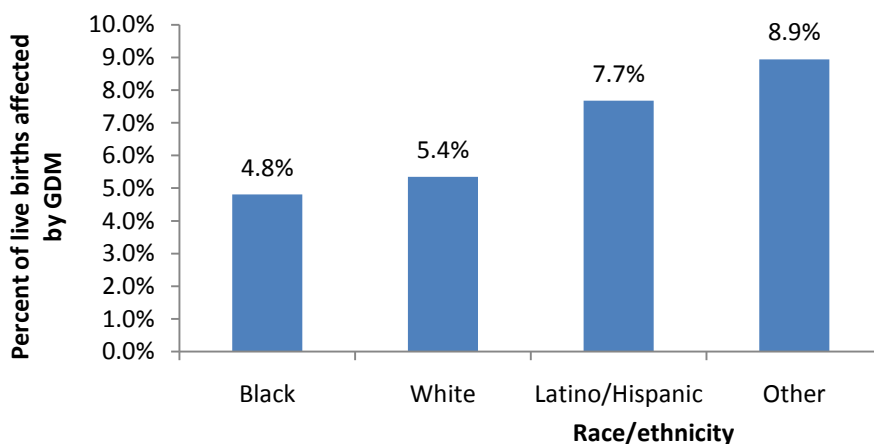
Cost, length of hospital stay, and percent Cesarean section by GDM status, 2007-2009

	Live births affected by GDM			Live births not affected by GDM		
	Average cost	Length of stay	Percent Cesarean sections	Average cost	Length of stay	Percent Cesarean sections
2007	\$9,900	3.3 days	45.6%	\$8,417	2.6 days	33.2%
2008	\$10,123	3.1 days	46.1%	\$8,879	2.6 days	33.8%
2009	\$11,479	3.3 days	50.3%	\$9,771	2.7 days	34.8%

Source: Virginia Health Information, Inc. Hospital Discharge Dataset, 2007-2009

Data notes: All data include live births with birth procedure code ICD-9 V-27 and GDM code 648.8-648.84; records for each year were de-duplicated. Cesarean deliveries were identified by procedure codes 74.0-74.99

Percent of live births affected by GDM by race/ethnicity, 2007-2009



Source: Virginia Health Information, Inc. Hospital Discharge Dataset, 2007-2009

Data notes: All data include live births with birth procedure code ICD-9 V-27 and GDM code 648.8-648.84; records for each year were de-duplicated.

Sources: CDC National Fact Sheet, 2011; Virginia BRFSS, 2010; Virginia Department of Health Office of Family Health Services, PRAMS 2007-2008; Virginia Health Information Hospital Discharge Dataset, 2007-2009.

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